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Ponce Landf PR → J. Museo

UNITED STATES GOVERNMENT

Memorandum

TO : Dr. Ernest Regna, Director
Solid Waste Branch

DATE: June 11, 1981

FROM : Carlos E. O'Neill
Environmental Engineer
Caribbean Office

SUBJECT: Upgrading of Ponce Landfill for Hazardous Waste Disposal

The purpose of this memorandum is to summarize the comments made by me during the evaluation of the proposal for upgrading the existing hazardous waste facility owned by the Municipality of Ponce, Puerto Rico. The evaluation was performed using the document title "Proposal for Upgrading of the Existing Hazardous Waste Management Facility in the Municipality of Ponce, Puerto Rico" dated January 1981. This document was submitted to our office by Eng. Fernando Rodríguez, CECOS' International local consultant and representative. I made a field inspection of the site on March 11 accompanied by Mr. Rodríguez, to observe the existing facilities.

Background/Historical Aspects

The municipality of Ponce has been operating the existing facilities for municipal solid waste and industrial waste disposal since 1970. Actual operation is permitted by the Environmental Quality Board (EQB) under permit number RS-11. The facility is mainly a sanitary landfill used for the disposal of municipal refuse. Industrial wastes have been disposed in the facility in a random fashion spread throughout the whole area. No records are available for industrial waste receipt except for those wastes disposed of by SKF into two lagoons constructed at the site. Enforcement action by EQB to improve the facilities has been performed leading to the actual authorize operation under a compliance plan. This compliance plan only covers the operation and management of the municipal solid waste disposal and does not deal with the area of hazardous waste disposal.

Hazardous Waste Disposal Facility

There are two lagoons for surface impoundment which are located at the highest elevation of the site. They are used to store and treat chemical wastes. Treatment consist of mixing and volume reduction by evaporation. One of the lagoons is unlined; the other is concreted lined. The integrity of the concrete lining is uncertain. Percolation through the bottom material in the unlined lagoon seems to be faster than ambient evaporation. At the time of the inspection it was completely dry.

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Representative from the city dump claims it has not been in use since a couple of months ago. No observation or monitoring wells near the lagoon were noticed. No monitoring of underground water is actually performed now or has been performed in the past.

Wheather, Surface/Groundwater & Geological Considerations

Surface runoff flows across the level areas covered by landfilled material. The final discharge point is unknown, since drainage channels were non-existing. Runoff also percolates through the landfill area creating a leachate that probably reaches the groundwater. But, determinations of the effects of the landfill on groundwater have not been made. A monitoring well was drilled recently but no samples have been analysed for this purpose. There are no permanent natural surface water bodies on the site. Surface drainage of the site will definitely require further study.

Soil percolation characteristics and geological description of the area may indicate possible contamination of underground waters from landfill leachate. Although, no data is available, the assessment of possible damages is recommended since the city of Ponce makes extensive use of wells. Search and investigation of wells around the facility is of paramont importance. Migration of waste contaminants may be expected through the alluvial formation. Movement due east and then due south is most probable. (See map no. 1). The alluvium in this area has been identified useful as an aquifer which typically yields on the order of 20 gpm on screened wells (McClymonds, 1972).

Infrequent, high intensity storms, such as hurricanes, are a possibility which should be considered. There is no structures present at the site to divert surface runoff from active portions and/or inactive. Therefore in high intensity storms, adverse impact to the environment may be expected.

Geological survey have indicated the presence of geological fault beneath the site. The existance of this geological fault present an area of great concern as to the location of the facility. Further investigation in this matter is recommended.

Air

The existing landfill is located within an attainment area as classified by EQB with respect to air emissions. Two types of potential air emissions were noticed. The first was dust resulting from the landfill operational activities. Control measures to reduce the amount of dust created by

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wind and the movement of heavy equipment on-site was non-existing. Water nor other dust suppresants were not applied to any active portion of the site. Internal roads were not asphalted. No measures as to encourage vegetation to grow on all inactive sections of site was noticed. Inactive portions remain to be flat lands with no vegetative grow at all. The second source identified was the waste being handle. The emission of nuisance odors from the landfilling operations was noticed, although the day of the inspection such odors were minimal at the entrance gate about 100 meters away from the nearest active portion. Odors to volatilizable organic compounds were noticed near the waste lagoons.

Location & Land Use

The site is within the city Ponce boundary. It is approximately within one half mile radius to dence populated areas. Adjacent undeveloped land exhibit an enormous economical pressure to develop the area for housing and/or industrial projects. Present and future land use policies should be considered since they may limit the facility useful life. It may also limit the facility projection for its planned expansion and/or for the development of new waste disposal methods.

Summary of Conclusions

After performing a preliminary evaluation of the aforementioned document and the inspection of the site, the following areas of study are identified to need further and detail discussion:

1) Actual hazardous waste disposal at the site is questionable as to be in compliance with interim status standards. RCRA enforcement procedures may be considered appropriate if violations are identified.

2) Monitoring of ground water to access contamination into the aquifer must be implemented as soon as possible.

3) Further and detail investigation of the existing geological fault beneath the site must be done. Impact of this fault upon the proposed chemically secure landfill need to be accessed.

4) Hurricanes and other high intensity storms episodes need to be addressed. The need to know how the facility will be operated and protected to prevent or minimized spills and other discharges of hazardous waste to the environment need to be detailed.

5) Runoff divertions, dikes, sediment controls and other related techniques need to be implemented. Any leachate problem need to be identified.

6) Landuse and classification policies of the site need to be considered due to rapid development experienced in the city of Ponce in the vecinity the proposed chemically secured landfill. The development in the area may be classified as a dence industrial/residential area that may impose limitation on future expansions, and modification and/or may limit the life span of the facility.

cc: James Reidy, 2-ENF-RCRA
⇒ John Frisco, 2SA-HWI w/enclos.
Photos attached

Base map from Peñuelas and Punta Cuchara Quadrangles.

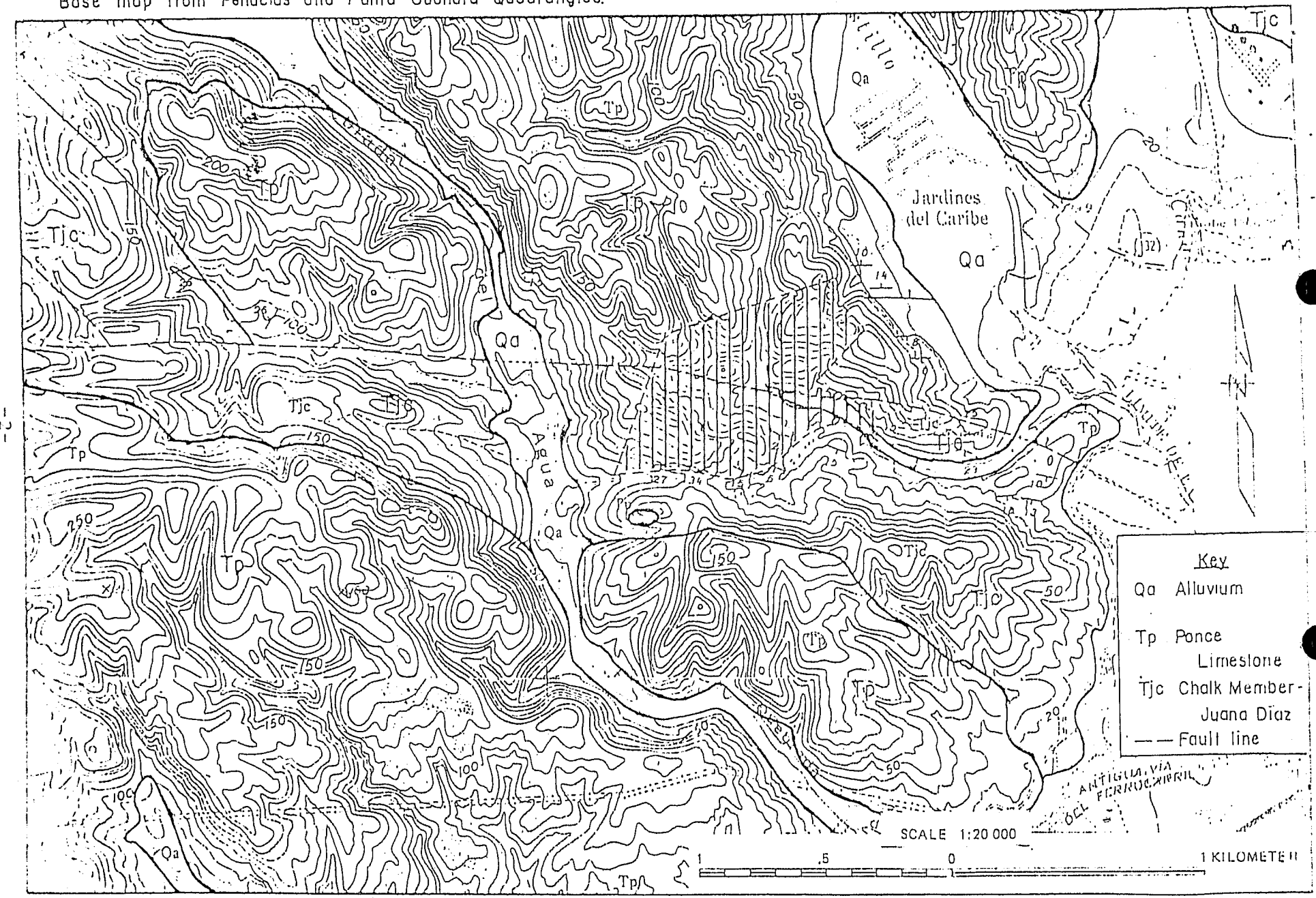

FIGURE 1

SOILS MAP FOR PONCE MUNICIPAL LANDFILL AND SURROUNDING AREA

PHOTOS DESCRIPTIONS

Equipment Used

Camera: Canon AF 35M/35mm

Lens: f 1:2.8/38mm

Weather: Clear and sunny

Photo by: Carlos E. O'Neill, P.E.
Environmental Engineer
Caribbean Office

Date & Time: March 11, 1981 - AM

Custody of Negatives: Environmental Protection Agency
Caribbean Office
P. O. Box 792
San Juan, Puerto Rico 00902

Photo No. 1: Property Entrance and Main Gate

Photo No. 2 & 3: Panoramic view inside the property, expose soil and active site

Photo No. 4: Unlined lagoon and internal fence protecting the lagoons

Photo No. 5: Cement lined lagoon

Photo No. 6: Truck discharging wastes from SKF

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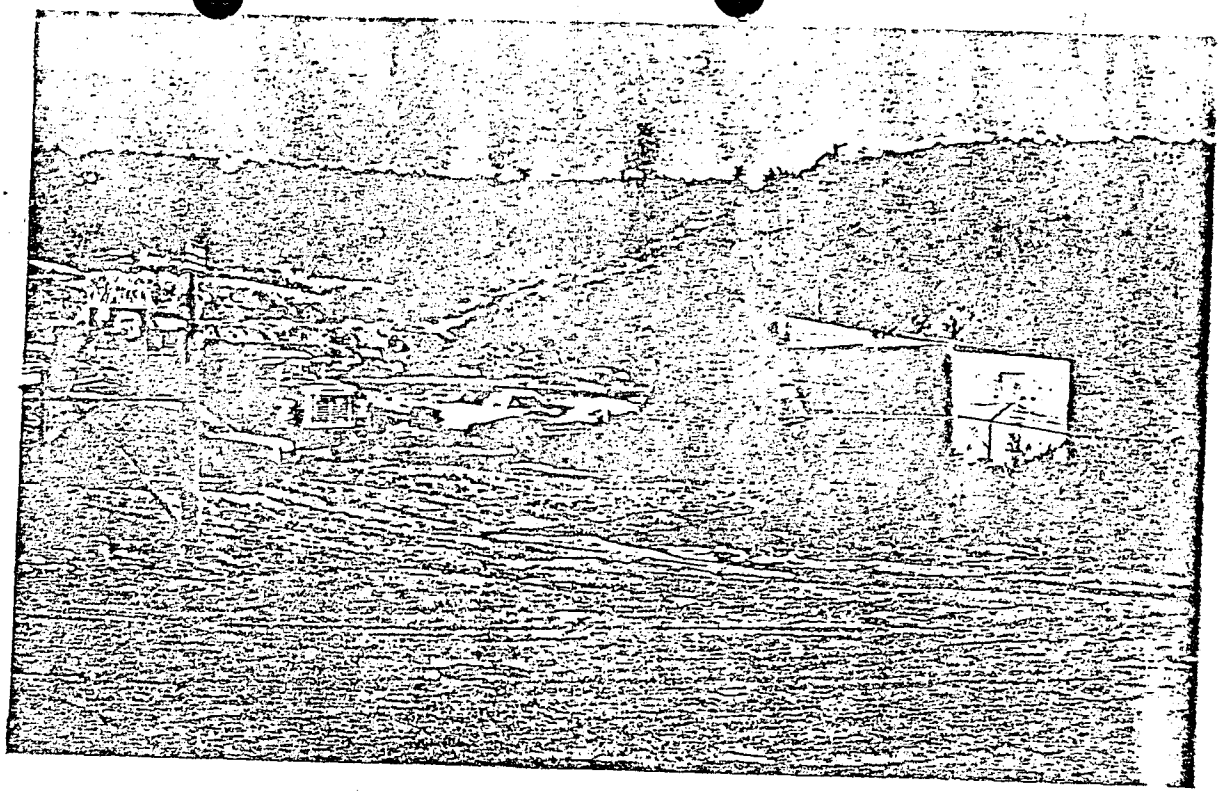

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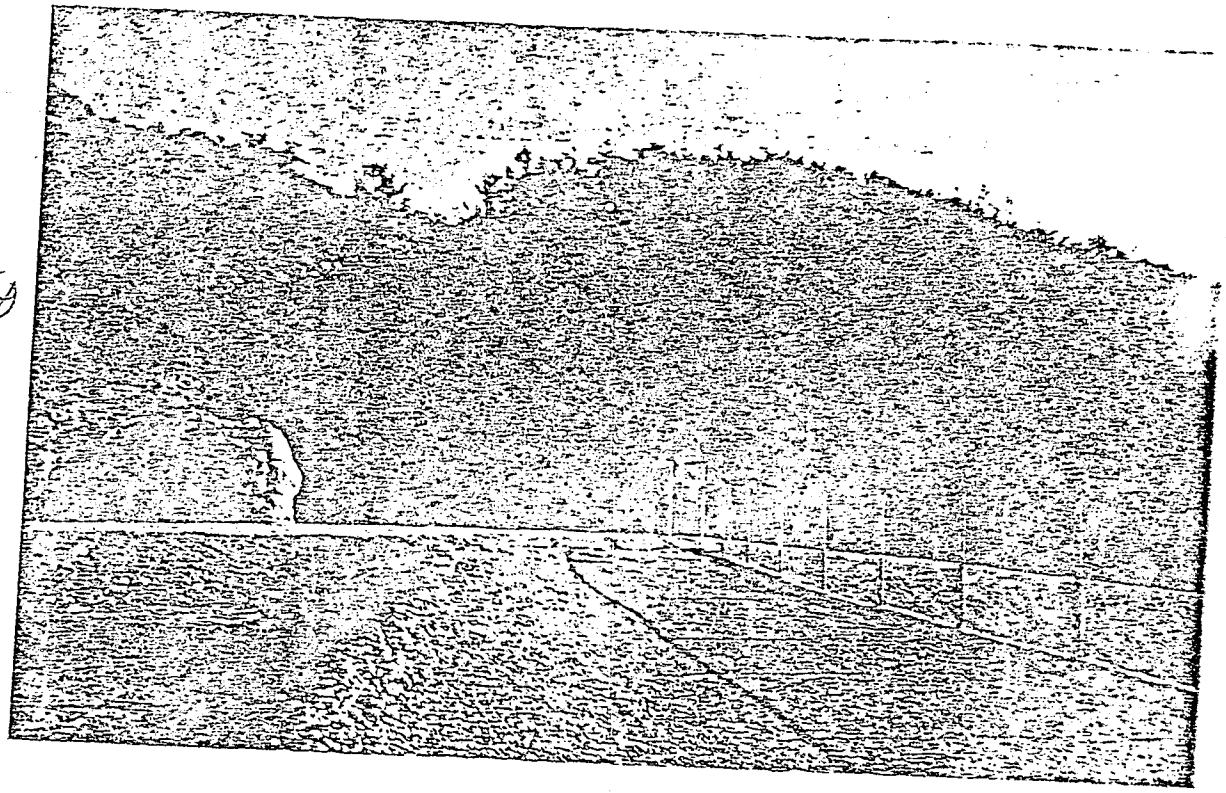

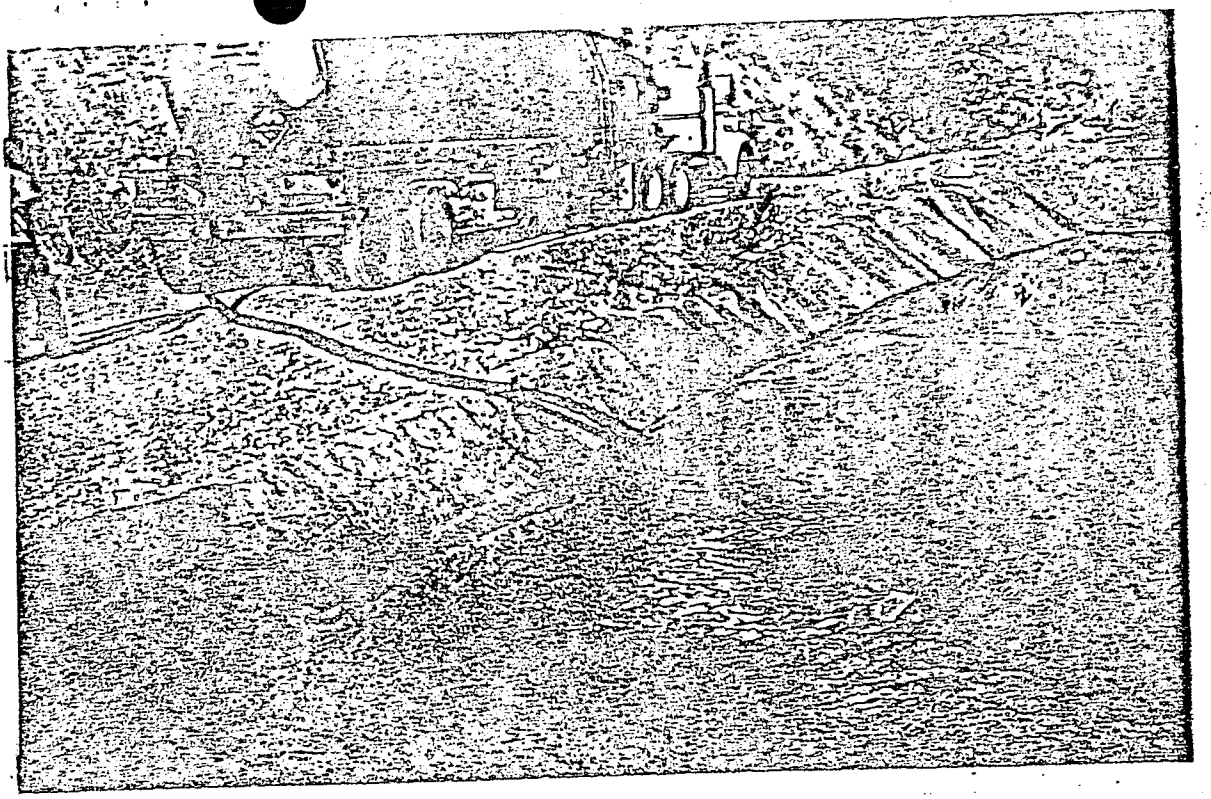

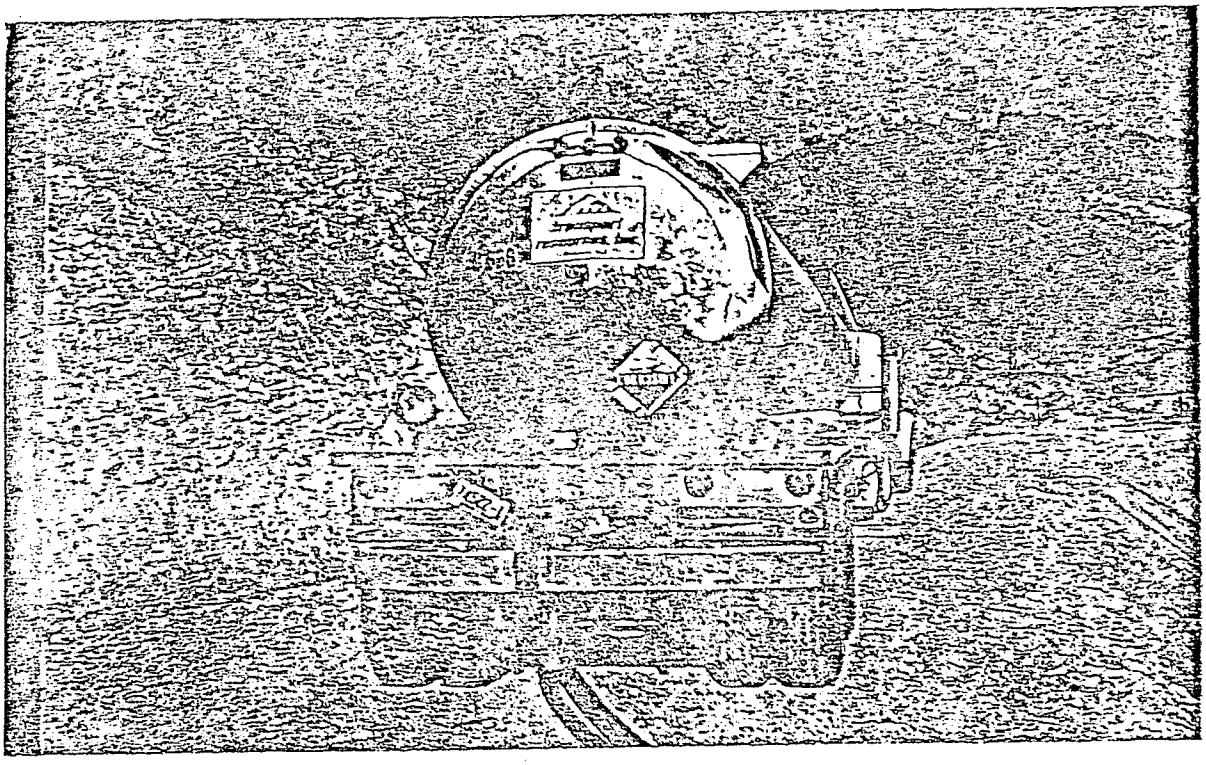

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